

The shell is also broader and the umbones seem to be generally more centrally located.

This species is named for Mr. Victor B. Scheffer who has collected a large series of mollusks during the last two summers while a member of the Biological Survey expeditions in the Aleutian Islands.

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## THE DISTRIBUTION OF LAND MOLLUSKS OF ALABAMA FROM THEIR PROBABLE CENTERS OF ORIGIN

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Alabama is a complex area because it contains within its borders representative portions of six physiographic provinces. Each of these provinces is characterized by its own peculiar combination of land forms and geological history. Each of these provinces has its own peculiar flora and fauna.

The nomenclature applied to each of these provinces was first established by N. M. Fenneman in his *Physiographic Divisions of North America*. W. D. Johnston, Jr., has published twice on these physiographic divisions as applied to Alabama. His second paper is entitled *A Revision of the Physical Divisions of Northern Alabama*, and was published in 1932 in the *Journal of the Washington Academy of Sciences*. Both he and Fenneman recognize only five physiographic provinces in Alabama. Fenneman believed that the Blue Ridge Province does not extend beyond the Coosa River in north Georgia. That would automatically include all the area which I am calling Blue Ridge in the Piedmont Highlands. However, it is the opinion of W. B. Jones, of the Alabama Geological Survey, R. M. Harper, and myself that this is a mistake. The topography and geological history of the doubtful area seems to justify the extension of the Blue Ridge to include the old montane crystalline area of Alabama. Dr. Harper recognizes this area as botanically justified in his monograph entitled *Economic Botany of Alabama*, Geological Survey of Alabama, 1913.

On the map I have outlined the following provinces:

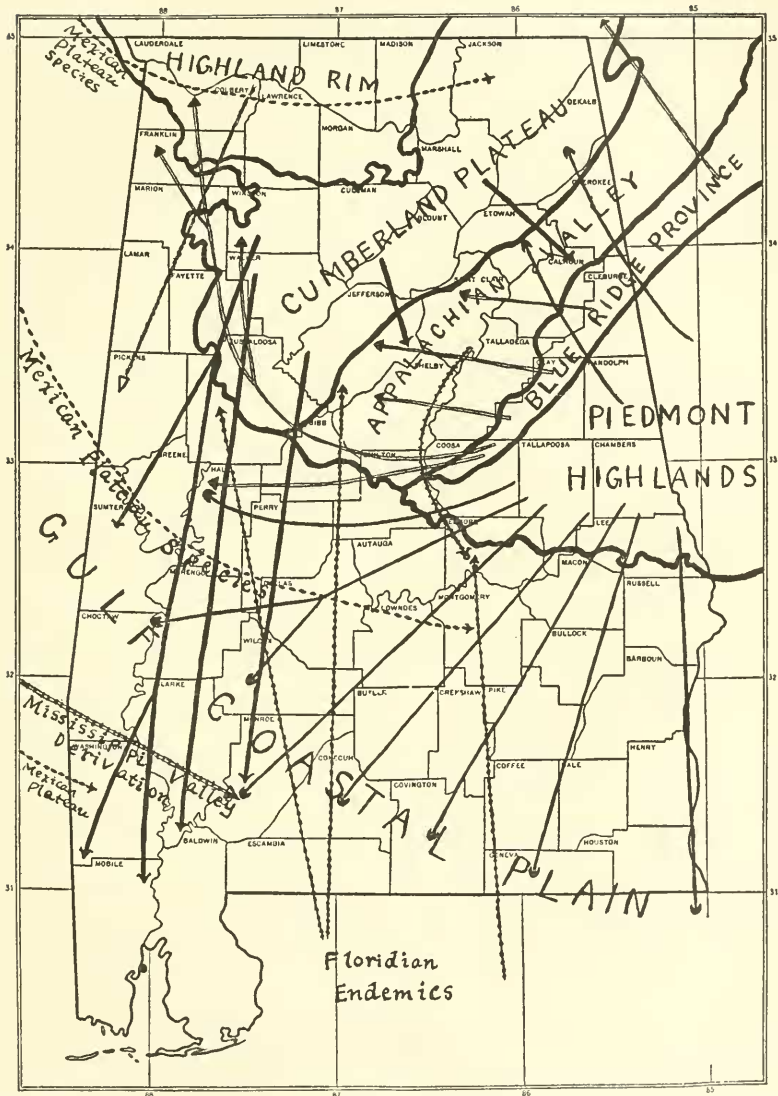


FIG. 1. The distribution of Alabama Land Mollusks from their probable centers of origin, with special reference to the origin of the Fauna of the Coastal Plain.

1. Coastal Plain
2. Piedmont Highlands
3. Blue Ridge Province
4. Appalachian Valley
5. Cumberland Plateau
6. Highland Rim

The Highland Rim is merely a special area of Fenneman's Interior Low Plateaus. The Cumberland Plateau is only a southern division of the Appalachian Plateaus.

The Gulf Coastal Plain has been the avenue for the migration of special elements. The prairie and cedar glade fauna contains elements that probably had their origins in the Mexican Highlands. The Mississippi Valley elements present a special complex, and are more closely related to the fauna of the Interior Lowlands of the Midwest than to that of the eastern Gulf Coast. The region of north Florida is a special area of endemics whose remote ancestors were probably derived from the Texan-Mexican complex. This study is of special interest because the Coastal Plain is a recent land area whose fauna is mostly derived from the old land areas, in spite of the endemism that has occurred in north Florida.

The following facts stand out:

1. The highest degree of endemism in the Alabama fauna is found in the Cumberland Plateau with twenty species, only part of which occur outside of the area. The Coastal Plain follows with twelve species. The Blue Ridge comes next with seven species. The other divisions have much smaller numbers to their credit within the limits of Alabama.

2. The Highland Rim has much in common with the Cumberland Plateau, but lacks endemics.

3. The Highland Rim and the Mississippi Valley have contributed species to only limited areas.

4. The Appalachian Valley has a fauna similar to that of the Cumberland Plateau, but lacks endemics, and has made only minor contributions to other areas.

5. Species of Blue Ridge origin have either migrated into the west-central part of the Coastal Plain, or have penetrated into the

Cumberland Plateau. In both cases their route of migration was by way of the terminus of the Appalachian Valley and the southwestern edge of the Cumberland Plateau, never penetrating far into it, but arriving finally in the Highland Rim.

6. The Cumberland Plateau has been the major contributor to the fauna of the western half of the Coastal Plain.

7. The Piedmont Highlands have been the major contributor to the fauna of the eastern and central portions of the Coastal Plain. One Piedmont species (*Polygyra maxillata*) has spread great distances into the western part of the Coastal Plain, apparently by following the river valleys.

8. The Floridian area has contributed several species to the upper edge of the central Coastal Plain area. This contribution is small, and probably followed both the swamp forests and the prairies.

9. Species of Mexican affinities (*Helicina orbiculata*, *Bulimulus dealbatus*) have come in both by way of the prairies and by the red cedar thickets, possibly migrating along the north end of the Mississippi embayment of the Tertiary from the Ozark Plateaus.

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NOTES ON *STEPHANODA PATAGONICA* (SUTER)  
AND THE GENUS *RADIODISCUS*, WITH A NEW  
NAME FOR *R. PATAGONICUS* PILSBRY

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Three of the original specimens of *Stephanoda patagonica* (Suter, 1900, p. 334, as *Pyramidula*) from a modern deposit at Santa Cruz, Patagonia, are in the collections of the Philadelphia Academy and one is in the British Museum (1900.7.5.9). Pilsbry (1900, p. 387) followed Suter in saying that the apical  $1\frac{1}{2}$  whorls of the Philadelphia specimens were smooth, but added (1911) that this was the result of their worn condition, and identified with them some specimens from the Rio Chico, the nepionic whorls of which had spiral sculpture, but no transverse riblets.

On examination I found that the specimen of Suter's species in the British Museum had well marked transverse ribs on the nepionic whorls. At my request Dr. Pilsbry kindly reexamined his